WHAT IS CLAIMED IS:

1. A control method for a parallel redundant power system that contains at least one UPS module or an inverter coupled to a load through a bus so as to supply power to the load, the method comprising:

using a droop method that utilizes a $P-\omega$ slope line and a $Q-V$ slope line to perform phase locking and current sharing; and

simulating a actual inductor being coupled to the output of the UPS module or the inverter by using an internal impedance of the UPS module associated with a current shift method, whereby the virtual inductor satisfies a requirement of the droop method.

2. The method as claimed in claim 1, wherein the current shift method comprises:

sensing an output voltage of the parallel redundant power system and an output current of the at least one UPS module;

shifting a phase of the output current of the at least one UPS module with an angle, whereby a shifted output current is obtained;

calculating a reactive power and an active power based on the shifted output current; and

adjusting the amplitude and the phase based on the $P-\omega$ slope line and the $Q-V$ slope line.

3. The method as claimed in claim 1, wherein the current shift method is performed by software.

4. The method as claimed in claim 1, wherein the current shift method is

performed by hardware.

5. The method as claimed in claim 1, wherein when the parallel redundant power system is coupled with mains to share the load, the rate of the output power from the mains is much greater than that from the parallel redundant power system.

6. The method as claimed in claim 1, wherein the method is applied to multiple UPS modules with inverters being coupled in parallel.

7. A parallel redundant power supply system comprising at least one UPS module or at least one inverter for supplying power to a load through a bus, wherein the at least one UPS module comprises an inverter, a PWM driver for driving the inverter, an inductor current detector coupled to the inverter, an output voltage detector, a load current detector and a control unit;

wherein the control unit utilizing a $P-\omega$ slope line and a $Q-V$ slope line of the droop method to perform phase locking and current sharing; wherein the control unit further simulates a actual inductor being coupled to the output of the at least one UPS module by using an internal impedance of the UPS module associated with a current shift method, whereby the virtual inductor satisfies a requirement of the droop method.

8. The system as claimed in claim 7, wherein the current shift method comprises:

sensing an output voltage of the parallel redundant power system and an output current of the at least one UPS module;

shifting a phase of the output current of the at least one UPS module with an angle, whereby a shifted output current is obtained;

calculating a reactive power and an active power based on the shifted output current; and

adjusting the amplitude and the phase based on the $P-\omega$ slope line and the $Q-V$ slope line.

9. The system as claimed in claim 7, wherein the control unit is a digital signal processor (DSP).

10. The system as claimed in claim 7, wherein the control unit is performed by software.

11.The system as claimed in claim 7, wherein the system further comprises a load sharing current wire, a synchronizing clock signal wire and a communication wire to allow multiple parallel UPS modules to be operated by a wire-connected mode,

wherein the load sharing current wire is provided to exchange output current information among the multiple parallel UPS modules;

wherein the synchronizing clock signal wire outputs a synchronizing signal to phase lock of the multiple parallel UPS modules;

wherein the communication wire is used to control information exchange among the multiple parallel UPS modules.

12. The system as claimed in claim 11, wherein the load sharing current wire is coupled to each load current detector of the multiple parallel UPS modules.

13. A UPS module comprising an inverter, a PWM driver for driving the inverter, an inductor current detector coupled to the inverter, an output voltage detector, a load current detector and a control unit;

wherein the control unit utilizing a $P-\omega$ slope line and a $Q-V$ slope line of the droop method to perform phase locking and current sharing; wherein the control unit further simulates an actual inductor being coupled to the output of the UPS module by using an internal impedance of the UPS module associated with a current shift method, whereby the virtual inductor satisfies a requirement of the droop method.

14. The UPS module as claimed in claim 13, wherein the current shift method comprises:

sensing an output voltage of the parallel redundant power system and an output current of the at least one UPS module;

shifting a phase of the output current of the at least one UPS module with an angle, whereby a shifted output current is obtained;

calculating a reactive power and an active power based on the shifted output current; and

adjusting the amplitude and the phase based on the $P-\omega$ slope line and the $Q-V$ slope line.

15. The UPS module as claimed in claim 13, wherein the control unit is a digital signal processor (DSP).

16. The UPS module as claimed in claim 13, wherein the control unit is performed with software.

17. The UPS module as claimed in claim 13 further comprising a load sharing current wire, a synchronizing clock signal wire and a communication wire.